

5 I Claim:

1. A sunglass lens, comprising:

a dielectric mirror for reducing glare and overall light transmission;

a first layer ophthalmic plastic;

a second layer ophthalmic plastic;

10 a polarizing layer encapsulated between said first and second plastic layers;

whereby said layers are arranged to provide a balanced light transmission profile in which

substantially 100% of UV-A & B light is absorbed to at least 400nm.

2. The sunglass lens according to claim 1, wherein said first and second ophthalmic plastic

15 layers are colorized with one from among the group of high-contrast blue-blocking amber-tint

and color discriminating grey tint.

3. The sunglass lens according to claim 2, wherein said first and second layers are CR-39 plastic.

20 4. The sunglass lens according to claim 3, wherein said first and second layers are

polycarbonate.

5. The sunglass lens according to claim 1, wherein said dielectric mirror further comprises a

multi-layered dielectric mirror.

- 5       6. The sunglass lens according to claim 5, wherein said multi-layered dielectric mirror further comprises at least six thin film layers vacuum deposited atop said first layer of plastic for further reducing light transmission and glare.
- 10      7. The sunglass lens according to claim 2, wherein said polarizing filter layer is molecularly bonded between said first and second ophthalmic plastic layers to avoid haze and delamination.
- 15      8. The sunglass lens according to claim 1, wherein said first and second ophthalmic plastic layers are colorized with a color discriminating grey tint, and the average blue light transmission of said lens is less than 7%.
9. The sunglass lens according to claim 1, wherein said first and second ophthalmic plastic layers are colorized with a high-contrast blue-blocking amber-tint, and the average blue light transmission of said lens is less than 0.4%.
- 20     10. A sunglass lens, comprising:  
          a first layer hydrophobic overcoat for protection from seawater and smudging;  
          a second layer dielectric mirror for further reducing light transmission and glare;  
          a third layer blue-blocking amber-tinted ophthalmic plastic material;  
          a fourth polarizing layer;  
          a fifth layer blue-blocking amber-tinted ophthalmic plastic material;

5           whereby said layers are arranged to provide a balanced light transmission profile  
optimum for use on the water in which substantially 100% of UV-A & B light is absorbed and  
with at least 99% absorption of blue light at up to 490 nm.

10         11. The sunglass lens according to claim 10, wherein said dielectric mirror further comprises a  
multi-layered dielectric mirror.

15         12. The sunglass lens according to claim 11, wherein said multi-layered dielectric mirror  
further comprises at least six thin film layers vacuum deposited atop said first layer of  
ophthalmic plastic for further reducing light transmission and glare.

20         13. The sunglass lens according to claim 12, wherein said polarizing filter layer is molecularly  
bonded between said first and second ophthalmic plastic layers to avoid haze and delamination.

25         14. The sunglass lens according to claim 13, wherein said said first and second ophthalmic  
plastic layers are CR-39 plastic.

15. The sunglass lens according to claim 14, wherein said first and second ophthalmic layers are  
polycarbonate.

25         16. The sunglass lens according to claim 14, wherein said first and second ophthalmic plastic

5        layers are colorized with a high-contrast blue-blocking amber-tint, and the average blue light transmission of said lens is less than 0.4%.

17.      A sunglass lens, comprising:

a first layer hydrophobic overcoat for protection from seawater and smudging;

10        a second layer dielectric mirror for further reducing light transmission and enhancing UV obstruction;

a third layer color-discriminating grey-tinted ophthalmic CR-39 plastic;

a fourth polarizing layer;

a fifth layer color-discriminating grey-tinted ophthalmic CR-39 plastic;

15        whereby said layers are arranged to provide a balanced light transmission profile optimum for use on the water in which substantially 100% of UV-A & B light is absorbed and with at least 99% absorption of blue light at up to 410 nm.

20        18. The sunglass lens according to claim 17, wherein said first and second layers are CR-39 plastic.

19. The sunglass lens according to claim 17, wherein said first and second layers are polycarbonate.

25        20. The sunglass lens according to claim 17, wherein said dielectric mirror further comprises a multi-layered dielectric mirror.

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21. The sunglass lens according to claim 20, wherein said multi-layered dielectric mirror further comprises at least six thin film layers vacuum deposited atop said first layer for further reducing light transmission and glare.

10 22. The sunglass lens according to claim 21, wherein said polarizing filter layer is molecularly bonded between said first and second CR-39 lenses to avoid haze and delamination.

15 23. The sunglass lens according to claim 20, wherein said first and second ophthalmic plastic layers are colorized with a color discriminating grey tint, and the average blue light transmission of said lens is less than 7%.

20 24. A sunglass lens comprising a rugate filter formed as a transparent coating with an incrementally varying refractive index profile along its width arranged to provide a balanced light transmission profile in which substantially 100% of UV-A & B light is absorbed to at least 400nm.

25 25. The sunglass lens according to claim 24, wherein said rugate filter is encapsulated between a first lens layer and a second lens layer.

25 26. The sunglass lens according to claim 25, wherein said first lens layer and second lens layer are ophthalmic plastic.

5      27. The sunglass lens according to claim 25, wherein said first lens layer and second lens layers are glass.

28. The sunglass lens according to claim 25, further comprising a dielectric mirror for reducing glare and overall light transmission.

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29. The sunglass lens according to claim 26, wherein said first and second ophthalmic plastic layers are colorized with one from among the group of high-contrast blue-blocking amber-tint and color discriminating grey tint.

15      30. The sunglass lens according to claim 26, wherein said first and second layers are CR-39 plastic.

31. The sunglass lens according to claim 26, wherein said first and second layers are polycarbonate.

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32. The sunglass lens according to claim 28, wherein said dielectric mirror further comprises a multi-layered dielectric mirror.

25      33. The sunglass lens according to claim 32, wherein said multi-layered dielectric mirror further comprises at least six thin film layers vacuum deposited atop said first layer of plastic for further reducing light transmission and glare.

- 5        34. The sunglass lens according to claim 29, wherein said first and second ophthalmic plastic layers are colorized with a color discriminating grey tint, and the average blue light transmission of said lens is less than 7%.

10      35. The sunglass lens according to claim 29, wherein said first and second ophthalmic plastic layers are colorized with a high-contrast blue-blocking amber-tint, and the average blue light transmission of said lens is less than 0.4%.

15      36. A sunglass lens comprising rugate filter means for selectively filtering wavelengths of light to preserve macular integrity.

20      37. A sunglass lens, comprising:  
                a rugate filter formed as a transparent coating with an incrementally varying refractive index profile along its width;  
                a polarizing layer;  
                said rugate filter and polarizing layer being encapsulated between first and second plastic layers;  
                whereby said polarizing layer, rugate filter, and first and second plastic layers are arranged to provide a balanced light transmission profile in which substantially 100% of UV-A & B light is absorbed to at least 400nm.

25      38. The sunglass lens according to claim 37, wherein said first lens layer and second lens

5       layer are ophthalmic plastic.

39. The sunglass lens according to claim 39, further comprising a dielectric mirror for reducing glare and overall light transmission.

10      40.     The sunglass lens according to claim 38, wherein said first and second ophthalmic plastic layers are colorized with one from among the group of high-contrast blue-blocking amber-tint and color discriminating grey tint.